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U. S. Department of Agriculture

# AGRICULTURAL EDUCATION MONTHLY.

U. S. DEPARTMENT OF AGRICULTURE,  
STATES RELATIONS SERVICE.

AGRICULTURAL INSTRUCTION DIVISION.

Vol. II, No. 7.

October, 1916.

## TEACHING SWINE JUDGING IN SECONDARY SCHOOLS.

### INTRODUCTION.

A study of the types and breeds of swine furnishes a suitable introduction to the subject of pork production. If an abundance of suitable illustrative material is used and it is accompanied by practice in judging it will furnish a means of arousing interest in the lessons to follow. Students who have little interest in ordinary swine often become enthusiastic when they are made acquainted with the results and possibilities of good breeding. It will not be possible in the time available in a high-school course to train expert judges. It should be the aim of the instructor, however, to approach the subject in such a manner that a permanent interest will be aroused. He should aim to establish such ideals in the minds of the students and develop such powers of observation and judgment that the students may become good judges with further practice.

### CLASSROOM INSTRUCTION.

*A study of types and breeds.*—Practice in judging should be accompanied by a study of the leading types and breeds of swine. Emphasis should be placed upon that type and those breeds most important in the school district. In most sections of the Corn Belt little attention need be given the bacon type except to use it as a means of bringing out better the lard type by contrast. A detailed study should be made of the characteristics of the breeds most common in the school district. In some sections one or more of the lesser known breeds are popular and hence should be given attention. In most sections the student should be able to distinguish the following breeds and recognize them upon sight: Poland-China, Berkshire, Duroc-Jersey, Chester White, Large Yorkshire, Tamworth, and Hampshire.

*Use of illustrative material.*—In the study of breeds and in establishing ideals of types in the minds of the students, nothing has value equal to living specimens which approach perfection. The teacher and his class should take advantage of fairs and local exhibits to make comparisons of breeds. Field trips should be made to surrounding farms to study good specimens of pure-bred swine along with methods of breeding and management. Inasmuch as there may be few good specimens convenient to the school and it is not always convenient to have lessons with the animals present, the teacher should make use of an abundance of illustrative

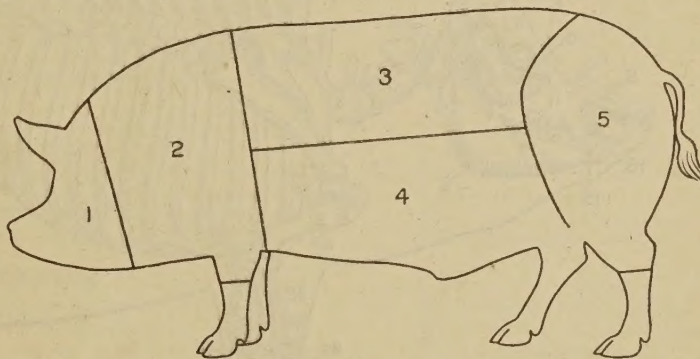


FIG. 1.—Outline for chart for teaching wholesale cuts of pork. 1, Head; 2, shoulder; 3, loin; 4, belly; 5, ham. Pure-bred Berkshire barrow.



material. Pictures of prize-winning swine appear from time to time in all good live-stock journals. If files are not kept of these papers the good pictures should be clipped and mounted

upon cards for classroom use. A stereopticon and a set of good slides will be found very helpful.<sup>1</sup>

*Relation of type to efficient production.*—In the classroom instruction the hog should be considered as a meat-producing machine, bringing out the relation of the type to efficiency. The students may consider it first from the standpoint of the packer, as it is the buyer who ultimately determines the value of a hog. Charts should be used to show the wholesale (fig. 1) and retail cuts of meat with relative prices marked off on outlines of hogs. The quality

of meat, smoothness in dressing, and size are factors considered by packers and which determine the price paid per pound.

In considering the hog from the feeder's point of view emphasis will be given such points as capacity for feed, efficiency in its use, strength, and vigor.

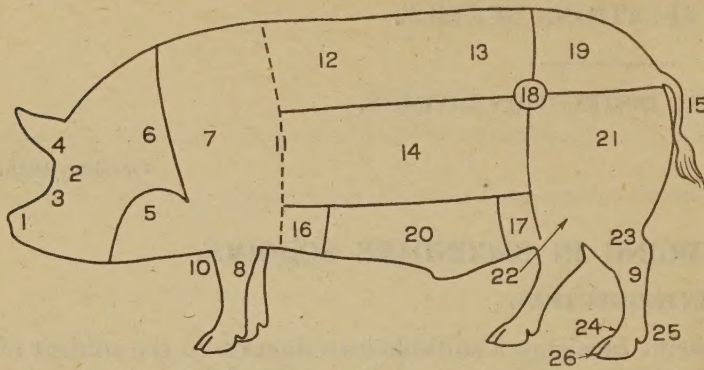


FIG. 2.—A chart for teaching names of the parts of the hog. 1, Snout; 2, eye; 3, face; 4, ear; 5, jaw; 6, neck; 7, shoulder; 8, foreleg; 9, hindleg; 10, breast; 11, chestline; 12, back; 13, loin; 14, side; 15, tail; 16, fore flank; 17, hind flank; 18, hip; 19, rump; 20, belly; 21, ham; 22, stifle; 23, hock; 24, pasterns; 25, dew claws; 26, foot.

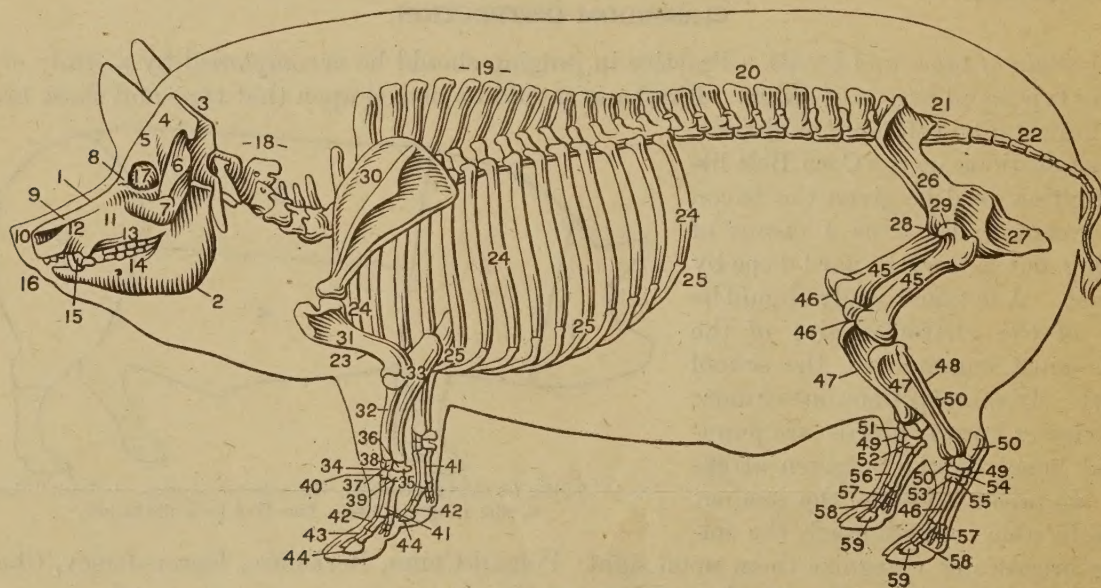


FIG. 3.—A chart for teaching anatomy of the hog. 1, Upper jaw; 2, lower jaw; 3, occipital; 4, parietal; 5, frontal; 6, temporal; 7, malar; 8, lachrymal; 9, nasal; 10, os rostri; 11, maxillary; 12, premaxillary; 13, upper molars; 14, lower molars; 15, tusk; 16, incisors; 17, eye socket; 18, cervical vertebrae; 19, dorsal vertebrae; 20, lumbar vertebrae; 21, sacrum; 22, caudal vertebrae; 23, sternum; 24, ribs; 25, costal cartilages; 26, ilium; 27, ischium; 28, pubis; 29, hip joint; 30, scapula; 31, humerus; 32, radius; 33, ulna; 34, knee joint; 35-40, carpal bones; 41, metacarpals; 42, cannon bones; 43, coronary; 44, coffin bones; 45, femur; 46, patella; 47, tibia; 48, fibula; 49, hock joint; 50-55, tarsal bones; 56, metatarsals; 57, cannon bones; 58, coronary bones; 59, coffin bones.

The breeder should pay attention to all of the points important to packer and feeder and consider also fecundity, prolificacy, and the ability to transmit these characters to

<sup>1</sup> Lantern slides illustrating types and breeds of swine may be obtained from the Division of Agricultural Instruction of the States Relations Service, U. S. Department of Agriculture. A list of these and other slides will be mailed upon application. These slides include the illustrations used in this number of the Monthly.



offspring. The latter quality will involve a study of records and pedigrees of breeding animals which will fit better with a study of breeding. Every encouragement should be given the students to lay the foundation for a breeding herd when they take up a pig project.

*The anatomy of a hog.*—Before the score card is taken up, the student should know the names of the parts of a hog and the terms used in judging. The accompanying diagram (fig. 2) may be placed on the blackboard with the names of parts omitted and the students asked to name them. Charts showing the skeleton (fig. 3) and internal organs will prove helpful. A trip to a packing house or to a farm at hog-killing time will be of value in making a study of internal anatomy and the relative values of the cuts of meat.

*The score card.*<sup>1</sup>—Some time may be used in the classroom in aiding the students to become familiar with the score card which they are to use. They should understand that the score card is a brief detailed description of a perfect animal designed to aid them in establishing an ideal. The card should aid them also in making a systematic examination of the animal with attention to details and should give them a sense of relative values in judging. It should be borne in mind that all score cards are arbitrary in their assignment of values. Variation in score cards is likely to continue, as there will always be a difference of opinion upon the relative values of minor points and upon forms of grouping. The following score card is from the Bureau of Animal Industry of this department:

SCORE CARD FOR FAT, OR LARD-TYPE, SWINE.

Scale of points, i. e., the relative value of each part, in points, when all parts total 100 points as shown in column for perfect score.	Score.		
	Perfect score.	Your score.	Judge's score.
General appearance, 32 points:			
Weight—Estimated—actual—pounds, according to age.....	2	.....	.....
Form—Deep, broad, low, symmetrical, compact, standing squarely on legs.....	10	.....	.....
Quality—Bone, clean; hair, silky; skin fine.....	10	.....	.....
Condition—Deep, firm, even covering flesh, giving smooth finish.....	10	.....	.....
Head and neck, 6 points:			
Snout—Medium to short, not coarse.....	1	.....	.....
Eyes—Full, mild, bright, large.....	1	.....	.....
Face—Short; cheeks, full; without wrinkles.....	1	.....	.....
Ears—Fine, medium size, soft, neatly attached.....	1	.....	.....
Jowl—Strong, neat, broad, full to the shoulders.....	1	.....	.....
Neck—Thick, short, broad on top.....	1	.....	.....
Forequarters, 11 points:			
Shoulders—Broad, deep, full, smooth, compact on top.....	5	.....	.....
Breast—Wide, roomy.....	2	.....	.....
Legs—Straight, short, strong, wide apart, well set.....	2	.....	.....
Pasterns—Strong, straight, upright.....	2	.....	.....
Body, 32 points:			
Chest—Deep, broad, large girth.....	3	.....	.....
Sides—Full and smooth from hams to shoulders, close ribbed.....	6	.....	.....
Back—Broad, straight, thickly and evenly fleshed.....	9	.....	.....
Loin—Wide, thick.....	8	.....	.....
Belly—Straight, wide.....	4	.....	.....
Flank—Even with underline.....	2	.....	.....
Hindquarters, 19 points:			
Hips—Smooth.....	2	.....	.....
Rump—Long, wide, level, well filled out.....	3	.....	.....
Hams—Heavily fleshed, deep, wide, thick.....	10	.....	.....
Legs—Straight, short, strong, wide apart, well set.....	2	.....	.....
Pasterns—Strong, straight, upright.....	2	.....	.....
Total.....	100	.....	.....

<sup>1</sup> Teachers should write to their State agricultural colleges and boards of agriculture for score cards.



## DESCRIPTION OF FAT, OR LARD-TYPE, SWINE.

## GENERAL APPEARANCE.

*Form.*—The general appearance of the lard hog is of primary importance. It should be both broad and deep and show a smooth compactness and symmetry of form. The topline should be straight or slightly arching. The underline should be straight, showing a belly trim and neat. Too great a length is apt to result in a weak back. The animal should stand squarely upon its legs and walk in an active, sprightly manner without a swaying movement. A hog of good lard type will present from the side view a parallelogram with rounded corners.

*Quality.*—Quality is indicated by fine, silky hair, with bone clean and moderately fine. Extreme fineness in quality may be associated with weakness and small size. Hogs with coarse hair, hide, and bone are apt to be poor feeders and dress with a large percentage of waste.

*Condition and weight.*—The weight will depend much upon the condition. In considering the condition the judge should keep in mind the purpose for which the animal is intended. Breeding animals are not expected to carry the weight of fat required in the modern show animal. The following is given as a suggestion regarding desirable weights of pigs at various ages:

Pigs 10 to 12 weeks old should weigh 50 to 65 pounds.

Pigs 5 to 6 months old should weigh 135 to 160 pounds.

Pigs 8 to 9 months old should weigh 185 to 220 pounds.

Pigs 12 months old should weigh 300 pounds or more.

It is important that the body should present a smooth finish, with the flesh smooth and firm and distributed evenly over the body.

## HEAD AND NECK.

*Snout.*—The snout varies in shape and length according to breed. In a general way the long snout is correlated with a long body as in the bacon type and the short snout with the more compact form of the lard type.

*Eyes.*—The eyes should be so prominent as to be easily seen. Folds of fat which tend to obstruct the vision are objectionable. A mild eye is associated with a docile disposition.

*Face.*—The face should be broad between the eyes, with cheeks and poll broad and full and fleshed without wrinkles.

*Ears.*—The ears should show refinement in quality, being of medium size and fine texture. The way the ear is carried depends upon the breed. In all breeds they should be attached neatly and show an absence of coarseness. Large, coarse ears indicate a general coarseness in type.

*Jowl.*—The jowl should be smooth and round, full and firm. Jowls that are excessively fat and flabby are objectionable. While the size of the jowl is rather a breed characteristic, a medium size is preferable in the lard type.

*Neck.*—The neck should be short and broad, so as to blend smoothly with the shoulder without a noticeable depression.

## FOREQUARTERS.

*Shoulders.*—The shoulders should be level and compact on top and fit smoothly into the body. In the boar especially there is apt to be a tendency toward too thick a covering of the shoulder, forming what is known as a shield similar to that of the wild boar.

*Breast.*—A wide, roomy breast with a deep chest indicates a strong constitution.



*Legs.*—The legs should be well placed, short, straight, and strong and should be set well apart with no tendency for the knees to knock together. The legs should taper and have indication of a clean, strong bone. It is important that the pastern should be strong, straight, and upright and that the feet should be strongly formed in order that the weight of the body may be well supported.

#### BODY.

*Chest.*—A deep, broad chest is essential in order that the heart and lungs may have plenty of room. A large girth indicates a strong constitution.

*Back and loin.*—The back and loin should be given careful attention, as they furnish some of the most valuable cuts of pork. If the back is to be strong it should not be too long. Both back and loin should be broad with thick, even flesh to furnish a quantity of meat of good quality. Any tendency to a sway back should be scored against.

*Sides.*—The side should be as long as is consistent with a strong back. The lard hog should not have long deep sides characteristic of the bacon type. The ribs should be close together, well arched, and continue low down, giving capacity. The sides should be firm, smooth, and free from all wrinkles.

*Belly.*—As the belly should show capacity it should be wide. A tendency towards paunchiness indicates excess of offal in dressing.

*Flank.*—The flank should be deep and full, with no tendency for it to be cut up, i. e., it should be even with the underline.

#### HIND QUARTERS.

*Hips.*—The hips should not be prominent, but placed neatly, and smoothly covered with flesh. Width is important in breeding stock.

*Rump.*—The rump should be of the same width as the back, long and fairly level. The fleshing should be even and smooth from hips to tail.

*Hams.*—The hams should be given considerable attention, as they form a valuable part of the hog carcass. They should show heavy flesh, which should be firm, indicating that there is not excess of fat. When viewed from the side and the rear they should be wide, deep, and plump, with good flesh well down to the hock.

*Legs.*—The hind legs, like the front ones, should be short and straight, set well apart and squarely under the body. The hocks should not knock together. The pasterns and feet should be strong.

#### THE BACON TYPE.

In sections where bacon swine are important a special score card should be used for this type. The following description will aid in adapting the score card and description of the lard hog to the bacon type.

*Form.*—The form of swine of the true bacon type is apparent at a glance, especially in contrast with the lard type. The bacon hog has a longer body than the lard type, showing less thickness and depth. Associated with the longer body are longer legs and snout.

*Quality.*—Although the bacon hog may have a coarser bone it is marked by more refined quality than the hog of lard type. The hair should be fine and silky and lie close to the body. The head and legs should present a trim, clear-cut appearance.

*Condition and weight.*—A thin hog of a lard type can not be sold to advantage on a market which requires Wiltshire sides, because it will lack the characteristic finish demanded for such bacon. There should be an interspersing of fat and lean with a covering of 1 to 1½ inches of fat. This covering should give the carcass a smooth, firm finish. The weight most acceptable for bacon hogs is from 180 to 190 pounds, although weights above and below these are accepted.



*Head and neck.*—This type is characterized by a longer neck and snout than the lard type. The jowl is also lighter and neater. A neck too long indicates a poor feeder, while a very short neck with a full jowl indicates a tendency to put on fat.

*Forequarters.*—The shoulders should not be prominent but lie in close to the body, having good width and depth with ample covering of flesh. The breast should not be full.

*Body.*—The chest of a bacon hog is deep and full but not too broad. Although the back carries the most valuable meat it should not be very broad, as a broad back denotes a tendency to fatten. The width should be the same from shoulder to ham. The sides are of most importance in hogs of this type as this portion is depended upon for bacon. The side should be of moderate depth and as long as is consistent with strength in the back. A sway back is objectionable. The sides should be smooth, free from all wrinkles and seams.

*Hindquarters.*—There is not the extreme development in the hindquarters that there is in the lard hog. The rump should be level, long, and moderately broad. The hams are long, and tapering, being relatively thin but broad from front to rear. Although the legs are longer than in the lard type they should be clean-cut, showing bone smooth, clean, and hard. It is important that the legs be straight and placed well at the four corners of the body, with strong pasterns to support a good weight.

#### THE BREEDING CLASS.

Breeding animals are similar to market animals in many respects, but since they are not kept so fat they do not appear so broad or compact as the market animals. As all of the points demanding attention in the market animal should be considered in breeding animals the same score card may be used. The following points should be given additional emphasis:

*Size.*—Size is important in breeding stock, as there must be a good capacity for breeding as well as feeding. Mature sows should weigh around 400 pounds, while the boar should weigh in the neighborhood of 500 pounds. Young sows should be well grown before they are used for breeding or they will not develop to full size. If undersized sows are used for breeding, the pigs will be smaller and tend to be weaker in constitutional vigor.

*Constitutional vigor.*—Breeding stock should not only have good size, but should show every evidence of strong constitutions if the pigs are to be thrifty. Evidence of a good constitution is to be found by examining the heart girth, chest, and fore flank. Capacity in these regions as a rule will mean large lungs and heart, which are so essential to strength and resistance to disease.

*Sex characteristics.*—The brood sow should show feminine characteristics in strong form. She should show refinement and quality. In looking at her head there should be no doubt as to her sex and every evidence that she will be a good mother. She should be active and vigorous, yet gentle and good tempered. Every brood sow should have twelve well-developed teats on a neat straight belly line. Refinement and femininity in the sow should give way to masculinity and strength in the boar. The boar is more compact than the sow, the appearance of which is enhanced by the development of shields on the sides of the shoulders.

*Breed characteristics.*—As breeding animals are more apt to be pure bred, breed characteristics should be considered in their selection. While all breeds of the same type are alike in a general way, each has its own special characteristics in the form of color, markings, shape, or dish of face, etc. These breed characteristics are brought out in the special score cards issued by the various breed associations. The cards<sup>1</sup> pertaining to the most important breeds may

<sup>1</sup> Score cards for individual breeds may be secured from the breed associations. A list of these associations with their addresses may be obtained from the Bureau of Animal Industry of this department.



be considered in the study of breeds after a consideration of the general type most common in the district.

In sections where breeds of both lard and bacon type are common a special trip for the purpose of studying these types by contrast will be profitable.

#### PRACTICE JUDGING.

*Preparations for a judging trip.*—Some schools are so fortunate as to have provisions for bringing animals into the classroom for illustrating a recitation and for practice in judging. Most classes, however, must depend upon neighboring farms for such practice. Very often exercises in stock judging, like other field trips, are failures because proper preparation is not made for them. The teacher should know definitely where he is going and what he is going to do. He should secure the consent of the owner and make such arrangements as may be necessary for convenient judging of the animal. It happens often that swine are in such pens and surrounded with such filthy conditions that the students can not get near them. It will be found very convenient to have a hogpen of movable sections. It will aid the students in fixing an ideal of the type in their minds if the first animal chosen approaches perfection. If the students have had no previous experience in judging swine and are not acquainted with the score card, a part of the first exercise may be spent profitably in learning how to approach the animal, in checking upon the features of anatomy which have been studied, and in going over the score card with the instructor in the presence of the animal. The teacher should become familiar with the animal beforehand, that he might spend his time with the students.

*How to approach the animal.*—It should be understood that the first observations are necessarily general, to be followed by a more detailed examination. In noting the general appearance of a hog, the students should be cautioned not to get too close. They will get a better impression of the animal as a whole from a distance of 15 feet. At this distance the animal should be observed from all sides and its activity as well as its form noted. The value of accurate first impressions should be emphasized. Although the hand may be used to note the quality of skin and hair, as a rule swine are judged by the eye. After the general appearance has been noted, the student should begin a systematic observation of details. It is well to begin in front, noting the head as a whole at first and then giving attention to such details as the eyes and the width between them, the ears, face, and snout. From the front also the width and symmetry of back and shoulders may be observed. Moving to one side, the student should note the conformation and straightness of both back and belly lines. From this position a steep rump, a cut-up flank, and a coarse, flabby jowl may be detected. The smoothness, breadth, and depth of hams and shoulders should be noted. The length and strength of legs, pasterns, and feet may be noted best from the side. From the rear, uniformity of width in the body may be observed. The hams should be given attention as to width, depth, and fullness. The position of the hind legs should be observed in their relation to giving room for the hams to develop. The observations made upon the one side should then be checked up from the other side.

*Use of the score card.*—After the students have become familiar with the score card and the method of approaching the animal, they may make individual scores. Each student should work independently. He should have at this time the ideal of the type he is judging well fixed in his mind. The card will give the score for perfection in the various points; the student will enter a score which represents the points which he judges the animal to be worth. The sum of these points gives the score of the animal. It should be remembered that the use of the score card is chiefly for the purpose of training the student in observation. As the value of the score



card in training judges depends upon the care with which it is used, no details should be overlooked.

The following is suggested as a basis for scoring:

1.0 Perfect.

0.8 Slight defect.

0.6 Marked defect.

.9 Very slight defect.

.7 Defective.

.5 Poor.

The number of points given for any particular part of the animal should be multiplied in the mind of the student by the per cent it is judged to be worth. For example, shoulders are assigned 5 points. If the animal is slightly defective, the score will be  $5 \times 0.8$  or 4 points for the shoulders.

The teacher will be able to make a score of the animal in less time than the students, as he is more familiar with the card and with the animal. The teacher's score may be used as a check for the others after each student has completed his score. If scales are convenient, the animal should be weighed, as a check upon the student's estimates. A thorough discussion should follow. If time permits, this should take place in the presence of the animal; if not, the cards may be collected and graded by the teacher and then discussed at the next class.

*Comparative judging.*—The use of the score card should be considered but preliminary to what is now considered the more efficient method of judging—that of comparison and placing according to merit. The use of the score card upon a number of hogs should establish an ideal in the mind of the student and assist him in taking in the general conformation of the animal readily and detecting such details as may indicate the worth of the animal. Even where but one animal is judged without a card, the comparative system may be said to be used, as comparison is made with the individual and the ideal in the mind of the student. In testing the judgment of students, it is usually best to take at first three or four animals which have marked differences in form and value. As skill is developed, animals more nearly equal may be chosen.

Each animal may be designated by letter or number. Each student should then place them in order of merit, giving written reasons for such placing. As in the use of the score card, each student should work independently. Conversation while the work is going on should be discouraged. After the judging is completed, there should be free discussion of the work done and the reasons given.

*Judging contests.*—The contest idea may be used to arouse interest in this work and to develop school spirit. Judging teams are selected to compete with those of other schools in judging swine and other animals at county and State fairs. Much can be done to arouse general interest in live stock and a good opportunity secured for practice in judging by holding local fairs and live-stock exhibits.